L 59504-65 EPF(c)/EWP(j)/EWT(m) Pc-4/Pr-4 RM
ACCESSION NR: AP5013772 UR/0366/65/001/005/0822/0827
543.51:547.364

AUTHOR: Polyakova, A. A.; Popova, T. I.; Petrov, A. A.

TITLE: Mass spectra and structure of organic compounds. 13. Mass spectra of vinyl acetylene alcohol

SOURCE: Zhurnal organicheskoy khimii, v. 1, no. 5, 1965, 822-827

TOPIC TAGS: mass spectrum, vinyl acetylene alcohol, vinylacetylenylcarbinol, methylvinylacetylenylcarbinol, ethylvinylacetylenylcarbinol, dimethylvinylacetylenylcarbinol, ionization, dissociation, mass charge ratio, peak, intensity, peak intensity, ionization chamber, electron current

ABSTRACT: The mass spectra of vinylacetylenylcarbinol (1-pentene-3-yn-5-ol), methylvinylacetylenylcarbinol (1-hexene-3-yn-5-ol), ethylvinylacetylenylcarbinol (1-heptene-3-yn-5-ol), and dimethylvinylacetylenylcarbinol (5-methyl-1-hexene-3-yn-5-ol) have been studied. The results show that: 1) vinyl acetylene alcohols have a much higher resistance to electronic charges than saturated alcohols of the fatty series; 2) cleavage of the hydrogen or of the alkyl radical is the first stage in the dissociative ionization; 3) the formation of hydrocarbon ions is typical of

Card 1/4

L 59504-65

ACCESSION NR: AP5013772

2

primary alcohols, and 4) the formation of oxygen-containing ions is typical of secondary and tertiary alcohols. A dissociation scheme for the maximal or intensive ions is suggested. The data on the mass spectra are given in Table 1 of the Enclosure. Orig. art. has: 1 figure and 2 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti (All-Union Scientific Research Institute for the Refining of Petroleum); Leningradskiy tekhnologicheskiy institut imeni Lensoveta (Leningrad Technological Institute)

SUBMITTED: 27Apr64 ENCL: 02 SUB CODE: OC,GP

NO REF SOV: 007 OTHER: 002

Card 2/4

L 59504-65
ACCESSION NR: AP5013772

ENCLOSURE: 01

Table 1. Mass spectra of vinyl acetylene alcohols

Mass-charge ratio, m/e	Intensity of peaks (in %) with respect to the maximal intensity				Mass-charge ratio, m/e	Intensity of peaks (in %) with respect to the maximal intensity			
	1-pentene-3-yn-5-ol (I)	1-hexene-3-yn-5-ol (II)	1-heptene-3-yn-5-ol (III)	5-methyl-1-hexene-3-yn-5-ol (IV)		1-pentene-3-yn-5-ol (I)	1-hexene-3-yn-5-ol (II)	1-heptene-3-yn-5-ol (III)	5-methyl-1-hexene-3-yn-5-ol (IV)
26	12.8	4.8	1.0	2.9	64	10.4	0.7	1.6	1.0
27	66.9	24.2	6.9	12.0	65	22.5	3.8	7.6	9.2
29	31.6	30.6	6.2	3.5	66	4.1	2.2	1.9	2.9
30	11.9	5.5			67	1.3	9.3	7.8	14.2
31	8.2	0.7			68		2.0	2.4	1.2
37	9.1	2.8			69	0.9	2.3	0.8	1.3
38	16.9	4.7	2.7	2.0	70	0.9			

Card 3/4

L 59504-65

ACCESSION NR: AP5013772

ENCLOSURE: 02

0

Table 1 (Cont.)

39	100.0	18.6	14.1	19.4	74	1.3	3.7	1.1	2.0
41	2.7	9.6	6.0	12.0	75	1.1	1.5	—	1.4
42	3.2	3.5	1.1	2.0	76	2.4	1.1	—	—
43	4.1	37.2	3.8	92.0	77	2.0	15.0	7.7	7.0
45	7.5	3.5	0.4	0.6	78	1.0	8.0	1.7	2.0
49	8.2	4.6	1.6	1.0	79	3.7	12.0	10.6	5.4
50	28.5	27.0	11.7	10.0	80	3.6	1.2	1.6	—
51	28.4	33.3	19.6	18.3	81	65.0	100.0	100.0	1.3
52	12.3	25.0	13.1	7.4	82	44.0	5.6	4.0	1.0
53	65.5	67.0	43.9	7.8	83	3.8	0.4	3.1	1.0
54	46.7	3.5	2.7	1.0	91	—	—	12.7	5.5
55	21.0	7.1	7.6	4.9	92	—	—	5.6	1.5
56	3.0	—	—	—	93	—	—	1.0	3.0
57	1.1	3.3	3.5	—	94	—	1.5	—	—
58	1.0	—	2.6	1.0	95	—	18.1	22.0	100.0
59	0.2	—	0.2	1.0	96	—	6.1	—	6.0
60	0.8	—	1.2	—	108	—	—	—	7.3
61	7.5	1.5	0.7	—	109	—	—	10.2	7.3
62	13.7	3.5	2.9	2.1	100	—	—	2.4	5.1
63	22.5	6.6	7.4	4.9					

Card KC 4/4

MOZGOVOY, A.A.; POPOVA, T.I.; SEMENOVA, M.K.

Deciphering the developmental cycle of the nematode Synhimantus brevicaudatus (Dujardin, 1845) parasitizing on gressorial birds and freshwater fishes. Dokl. AN SSSR 162 no.3:719-720 My '65. (MIRA 18:5)

1. Submitted July 6, 1964.

POPOVA, T.I.; SIMONOVA, N.A.; BAGOTSKIY, V.S.

Mechanism of the oxidation of polyhydric alcohols and formamide on a platinum electrode. Zhur. fiz. khim. 38 no.10:2452-2455 O '64. (MIRA 18:2)

1. Institut elektrokhimii AN SSSR.

POPOVA, T.I.; MOZGOVOY, A.A.; DMITRENKO, M.A.

Study of the biology of Ascaridata in White Sea animals. Trudy Gel'm. lab. 14:163-169 '64. (MIRA 17:10)

POPOVA, Tamara I.

"Types of ontogenesis of parasitic nematodes developing without intermediate host."

report presented at the 1st Intl Cong of Parasitiology, Rome, 21-26 Sep 64.

Moscow State Univ.

KHOMYAKOV, Yu.M.; POPOVA, T.I.

Emergency splenectomy for uterine hemorrhage in Werlhof's disease. Akush. i gin. 39 no.4:78-79 Jl-Ag'63 (MIRA 16:12)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. I.D.Korabel'nikov) Chelyabinskogo meditsinskogo instituta i khirurgicheskogo otdeleniya bol'nitsy Chelyabinskogo metallurgicheskogo zavoda (glavnyy vrach O.V.Garbuz).

MAZUROVA, T.M.; POPOVA, T.I.; SHKUSHKOVICH, A.Ya.; SHEVELEVA, A.A.; GUNER, I.I.; LAVRENOVA, V.A.

Letter to the editors. Stomatologiia 38 no.3:72 My-Je '59. (MIRA 12:8)

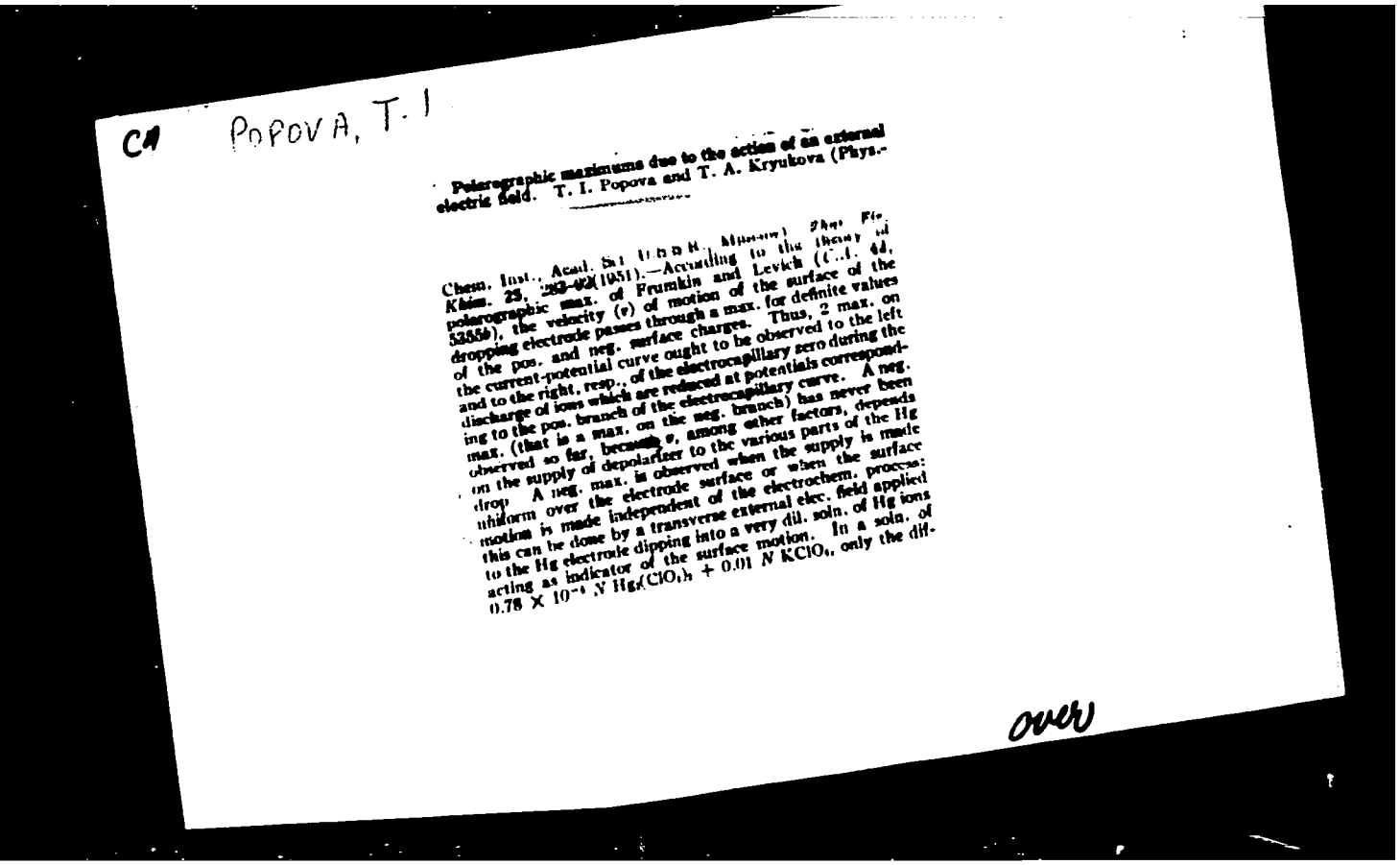
(PLASTICS)

POPOVA, T. I. Cand Chem Sci

Dissertation: "Positive and Negative Polarographic Maximums of First Kind." 22/6/50

Inst of Physical Chemistry, Acad Sci USSR

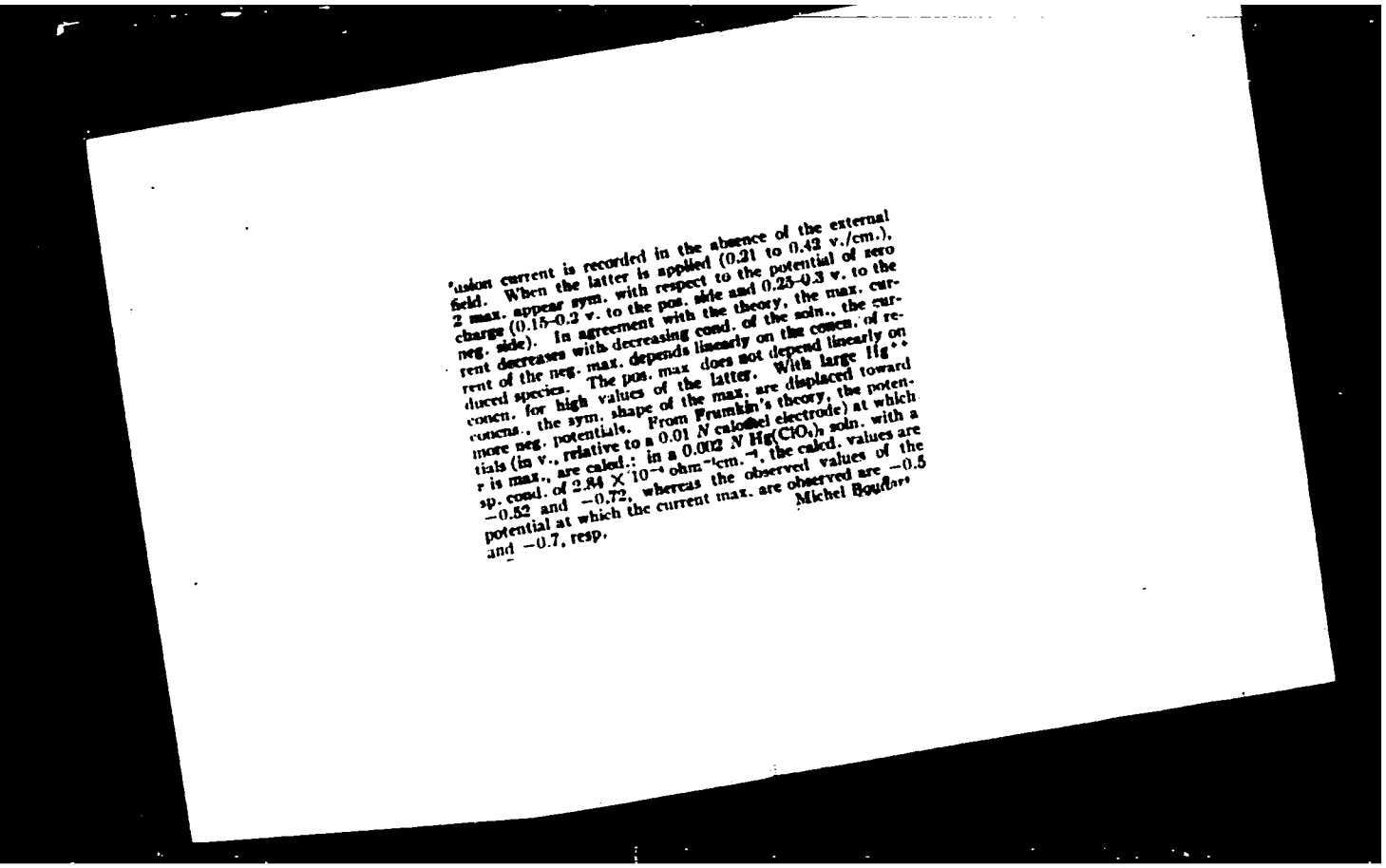
SO Vecheryaya Moskva
Sum 71



CA POPOVA, T. I

Polarographic maximums due to the action of an external electric field. T. I. Popova and T. A. Kryukova (Phys.-Chem. Inst., Acad. Sci. U.S.S.R., Moscow). *Zhur. Fiz. Khim.* 25, 293-9(1951).—According to the theory of polarographic max. of Frumkin and Levich (*C.A.* 44, 5355b), the velocity (*v*) of motion of the surface of the dropping electrode passes through a max. for definite values of the pos. and neg. surface charges. Thus, 2 max. on the current-potential curve ought to be observed to the left and to the right, resp., of the electrocapillary zero during the discharge of ions which are reduced at potentials corresponding to the pos. branch of the electrocapillary curve. A neg. max. (that is a max. on the neg. branch) has never been observed so far, because *v*, among other factors, depends on the supply of depolarizer to the various parts of the Hg drop. A neg. max. is observed when the supply is made uniform over the electrode surface or when the surface motion is made independent of the electrochem. process: this can be done by a transverse external elec. field applied to the Hg electrode dipping into a very dil. soln. of Hg ions acting as indicator of the surface motion. In a soln. of 0.78×10^{-4} *N* $Hg_2(ClO_4)_2$ + 0.01 *N* $KClO_4$, only the dif-

over



'usion current is recorded in the absence of the external field. When the latter is applied (0.21 to 0.42 v./cm.), 2 max. appear sym. with respect to the potential of zero charge (0.15–0.2 v. to the pos. side and 0.25–0.3 v. to the neg. side). In agreement with the theory, the max. current decreases with decreasing cond. of the soln., the current of the neg. max. depends linearly on the concn. of reduced species. The pos. max does not depend linearly on concn. for high values of the latter. With large Hg^{++} concns., the sym. shape of the max. are displaced toward more neg. potentials. From Frumkin's theory, the potentials (in v., relative to a 0.01 *N* calomel electrode) at which r is max., are calcd.: in a 0.002 *N* $Hg(ClO_4)_2$ soln. with a sp. cond. of 2.84×10^{-4} $ohm^{-1}cm.^{-1}$, the calcd. values are −0.52 and −0.72, whereas the observed values of the potential at which the current max. are observed are −0.5 and −0.7, resp.

Michel Boudart

POPOVA, T.I.; BOGOTSKIY, V.S.; KABANOV, B.N.

Effect of small amounts of metal impurities on the value of hydrogen overvoltage on zinc in concentrated alkaline solutions. Zhur. prikl. khim. 36 no.8:1743-1748 Ag '63. (MIRA 16:11)

PAVLYUCHENKO, M.M.; POPOVA, T.I.

Energy of elementary events of formation of the peroxide ion.
Dokl. AN BSSR 7 no.7:456-458 Jl '63. (MIRA 16:10)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.

POPOVA, T.I.; SIMONOVA, M.A.

Passivation of indium in aqeous solutions. Izv. AN SSSR. Ser.khim. no. 7:1187-1191 Jl '63. (MIRA 16:9)

1. Institut elektrokhimii AN SSSR.
(Electrodes, Indium) (Passivation)

PAVLYUCHENKO, M.M.; POPOVA, T.I.

Energy of formation of the peroxide ion. Dokl. AN BSSR 7 no.3: 174-177 Mr '63. (MIRA 16:6)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.
(Peroxides) (Thermochemistry)

POPOVA, T.I.; POLYAKOVA, A.A.; ZIMINA, K.I.

Mass spectroscopic analysis of alcohols. Trudy Kom.anal.khim. 13:490-495 '63. (MIRA 16:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i polucheniyu iskusstvennogo zhidkogo topliva.
(Alcohols) (Mass spectrometry)

S/076/62/036/007/003/010
B101/B138

AUTHORS: Popova, T. I., Bagotskiy, V. S., and Kabanov, B. N. (Moscow)

TITLE: Anodic passivation of zinc in alkali. I. Measurements at constant current densities

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 7, 1962, 1432 - 1438

TEXT: The potential-time curves for rotating zinc anodes were oscillographically recorded in 0.1 - 1 N KOH at 60 - 5000 rpm, 20°C, and current densities, i, of up to 340 ma/cm^2. The curve $1/Q_{pass}$ showed three sections. Between 10 and 200 ma/cm^2, the total amount of electricity required for passivation rises linearly with i, and is not affected by changes in the rate of stirring; at i > 200 ma/cm^2, Q_{pass} becomes independent of i and reaches a limiting value which is independent of the stirring rate but diminishes with decreasing alkali concentration; at i < 10 ma/cm^2, Q_{pass} is larger than would correspond to a linear relation between Q_{pass} and i, and the stirring rate affects Q_{pass}. Conclusion: At medium and high i, the

Card 1/2

passivation time t_p of the zinc electrode is shorter than that required for establishment of steady-state diffusion in the pre-electrode layer of the solution. τ_{pass} becomes dependent on the stirring rate only if the passivation time is equal to or greater than this period. This holds for small current densities and high stirring rates. The linear dependence of $1/\tau_{pass}$ on i is attributed unsteady diffusion near the electrode surface. This changes the state of the electrode surface and retards the dissolution rate of Zn. In dilute solutions, q_2, the amount of electricity expended on passivation at high current densities, reaches a limiting value of 1 mcoul/cm^2, which is equivalent to an amount of oxygen or oxide which does not form a complete single layer over the zinc. There are 5 figures and 2 tables.

ASSOCIATION: Akademiya nauk SSSR, Institut elektrokhimii (Academy of Sciences USSR, Institute of Electrochemistry)

SUBMITTED: September 7, 1960

S/076/62/036/007/004/010
B101/B138

AUTHORS: Popova, T. I., Bagotskiy, V. S., and Kabanov, B. N. (Moscow)

TITLE: Anodic passivation of zinc in alkali. II. Potentiostatic and alternating current measurements; charging curves

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 7, 1962, 1439 - 1444

TEXT: The character of passivating layers was studied on the example of zinc in alkali by potentiostatic recording of the polarization curves, recording of the activation curves, and measurement of the impedance of the zinc electrode. Results: Zn dissolves in anodic polarization up to -1.1 v (versus hydrogen standard electrode); O_2 is liberated at potentials > + 1.7v. The form of the polarization curves is independent of the KOH concentration, but the dissolution rate rises with concentration. When the stirring rate was increased from 6 to 83.5 r/sec the rate of dissolution in 0.5 N KOH increased 2-3 times. There is a linear dependence between i (ma/cm^2) and $\sqrt{\omega}$ (ω = angular velocity of the rotating anode). If the zinc anode is passivated at potentials more positive than -0.3 v, activation is retarded. After 60 min passivation at -0.2 or +0.4 v (i = 0.03 ma/cm^2), Q was 0.2 or

Card 1/2

Card 2/2

POPOVA, T.I.; KABANOV, B.N.

Anodic behavior of iron in alkaline solution in the presence of anions. Zhur.fiz.khim. 35 no.6:1295-1300 Je '61. (MIRA 14:7)

1. Akademiya nauk SSSR, Institut elektrokhimii.
(Iron—Electric properties)

S/020/60/132/03/42/066
B004/B007

5.1300

AUTHORS: Popova, T. I., Bagotskiy, V. S., Kabanov, B. N.

TITLE: Anodic Passivation of Zinc in Alkaline Solutions

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 3, pp. 639-642

TEXT: It was the aim of this paper to investigate the influence exerted by the adsorption of oxygen and by the formation of an oxide film upon the passivation of zinc. The anodic behavior of Zn was investigated in KOH by means of oscilloscopic recording of the potential - time curve $\varphi(t)$ at constant current density i on a rotating disk electrode. $Q_{pass} = it_n$ was determined (Q_{pass} is the amount of electricity necessary for passivation, t_n is the time up to passivation). Fig. 1 shows the diagram $1/Q_{pass} = f(i)$. At mean current densities there is a linear dependence between $1/Q_{pass}$ and i. In the case of i being low, Q_{pass} becomes dependent on the rate of stirring, and in the case of a very low i and a high rate

Card 1/3

of stirring, no passivation occurs. From these results as well as from the anodic polarization curve (Fig. 2), the curve of the increase of the potential after 60-min passivation and after switching off the anode current (Fig. 3) as well as from the dependence of the dissolution rate of the passivated electrode on the speed of rotation (Fig. 4) the authors draw the following conclusions: The dissolution of zinc depends on the dissolution rate of the zinc oxide (and peroxide). As passivation occurs already at potentials (-1.1 to -1.0 v), which are more negative than the reduction potential of the zinc peroxide in the oxide film, passivation is primarily based on a change in the concentration of KOH and the zincate retarding dissolution in the liquid layer near the electrode. The formation of the oxide film is a secondary process. There are 4 figures and 7 references: 4 Soviet, 2 German, and 1 Indian.

ASSOCIATION: Institut elektrokhimii Akademii nauk SSSR (Institute of Electrochemistry of the Academy of Sciences, USSR)

PRESENTED: January 25, 1960, by A. N. Frumkin, Academician

Anodic Passivation of Zinc in Alkaline Solutions S/020/60/132/03/42/066
B004/B007

SUBMITTED: January 11, 1960

Card 3/3

POPOVA, T.I.; KRYUKOVA, T.A. (Moscow)

Polarographic peaks of the first order. Part 1: Dependence of the peak current on the concentration of the substance being reduced and on the electric conductivity of the solution. Zhur.fiz.khim. 34 no.6:1226-1233 Je '60. (MIRA 13:7)

1. Akademiya nauk SSSR, Institut elektrokhimii, Moskva.
(Reduction, Electrolytic) (Polarography)

AUTHORS: Popova, T.I., Kabanov, B.N.

TITLE: Mechanism of the Sulfating of Lead Storage Cells and Methods of Its Elimination (Mekhanizm sul'fatatsii svintsovykh akkumulyatorov i metody yeye ustraneniya)

SOV/80-32-2-16/56

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol XXXII, Nr 2, pp 326-336 (USSR)

ABSTRACT: For the study of the sulfating mechanism of negative plates of a sulfuric acid lead storage cell the polarization method has been developed for determining the rate of lead sulfate dissolution. Sulfating is due to the adsorption of surface-active substances on the surface of lead sulfate crystals which impedes the dissolving of crystals. In the presence of substances which are well adsorbed on lead the loading of the negative plates is hampered which is explained by a blocking of the surface of the spongy lead. In the absence of surface-active substances the negative electrode may remain in the discharged state for a long time without the loading being impeded, i.e. without sulfating. The polarization method developed here may also be used for the analysis of organic compounds, like separators etc, in order to determine admixtures which are

Card 1/2

Mechanism of the Sulfating of Lead Storage Cells and Methods of Its Elimination

detrimental to the negative electrode. Sulfated plates may be regenerated by removing the adsorbed substance using a strong cathode polarization.
There are 9 graphs, 1 diagram, and 11 references, 4 of which are Soviet, 4 English, 2 German, and 1 American.

SUBMITTED: April 29, 1957

Card 2/2

SOV/81-59-16-58488

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 16, p 408 (USSR)

AUTHORS: Zizin, V.G., Popova, T.I., Safina, R.M.

TITLE: A Laboratory Electric Dehydrator for Continuous and Complete Extraction of Salts From Crude and Prepared Oils

PERIODICAL: Novosti neft. tekhn. Neftepererabotka, 1958, Nr 8, pp 29-31

ABSTRACT: In the two-stage laboratory electric dehydrator for continuous elimination of salts from crude and prepared oils the first stage (a brass pipe with an inner diameter of 6 mm, 400 mm long, within which a wire of 0.4 mm in diameter is drawn along the axis) operates under a tension of 3 kv; the second stage (cylinder and pipe, coaxially located; radial distance between them 5 mm) operates under a current of high frequency with a tension of 220 v. The efficiency of desalting in the first stage is ~90%; in the second - 90 - 95%; under the action of both stages it is practically complete. The agreement of the results obtained on the described apparatus and by the State Standard GOST 2401-47 is satisfactory.

L. Andreyev.

Card 1/1

SURKIN, D.P.; POPOVA, T.K.

Effectiveness of treating chronic tonsillitis with menthol-penicillin oil inhalation. Pediatriia no.5:63-65 S-O '53. (MLRA 6:12)

1. Iz Tsentral'nogo detskogo klinicheskogo sanatoriya "Boyarka".
(Tonsils--Diseases) (Inhalation (Therapeutics))
(Penicillin)

POPOVA, T.I.; POLYAKOVA, A.A.; KHOTIMSKAYA, M.I.

Mass-spectrometric analysis of heptanols. Neftekhimiia 5 no.1: 149-152 Ja-F '65. (MIRA 18:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i Institut neftekhimicheskogo sinteza AN SSSR imeni Topchiyeva.

POPOVA,T.N.; PRILEZHAYEVA,N.A.

Investigation of the distribution of molecules by their vibration conditions in glow discharges. Izv. AN SSSR Ser. fiz. 19 no.1: 20-21 Ja-F '55. (MLRA 8:9)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni V.V.Kuybysheva
(Spectrum analysis) (Spectrometer)

POPOVA, T.N.

POPOVA, T.N. "Investigation of the Distribution of Molecules in Oscillating States in Glow Discharge." Tomsk State U imeni V.V. Kuybyshev. Tomsk, 1956.(Dissertation for the Degree of Candidate in Physicomathamatical Science)

So: Knizhnaya Letopis', No. 18, 1956,

24(7)

AUTHOR: Popova, T.N. SOV/139-59-1-8/34

TITLE: The Probabilities of Certain Vibrational Transitions in Bands of the Fourth Positive System of CO, First Negative System of CO^+, and the Violet System of CN (Veroyatnosti nekotorykh kolebatel'nykh perekhodov dlya polos IV polozhitel'noy sistemy CO, I otritsatel'noy sistemy CO^+ i fioletovoy sistemy CN)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, 1959, Nr 1, pp 54-56 (USSR)

ABSTRACT: The probabilities of vibrational transitions are necessary for calculation of intensity distributions in the spectra of diatomic molecules. The probability of a transition from a vibrational state v' (the upper electron level) to a state v'' (the lower electron level) is given by:

$$A = h\nu \left| \int_{-\infty}^{+\infty} \psi_{v'}(r) \psi_{v''}(r)\, dr \right|^2 , \qquad (1)$$

where the expression under the integral sign (denoted by C) is the amplitude of the probability of the appropriate vibrational transition and ν is the transition frequency. In her studies of the population of molecular vibrational

Card 1/4

The Probabilities of Certain Vibrational Transitions in Bands of the Fourth Positive System of CO, First Negative System of CO+, and the Violet System of CN

states in discharges (Ref 5) the author used several methods of calculation of the integral C of Eq (1). The present paper reports the results of such calculations for certain vibrational transitions of the Fourth Positive System of CO, the First Negative System of CO^+ and the Violet System of CN. In these calculations Manneback's procedure (Ref 1) was followed. To find the approximate value of the integral C, Manneback assumed that: (a) the molecule is a harmonic oscillator, and (b) the equilibrium separations of the upper and lower electron states of the molecule are equal, or very nearly equal. The calculation of the amplitudes of the probabilities of vibrational transitions reduces to a determination of the integral C from two recurrent formulae given by Eqs (2) and (3). Manneback's approximate method could be used in the work reported, because the probabilities of transitions were calculated for vibrational levels with small vibrational quantum numbers, i.e. anharmonicity of

 molecular vibrations could be neglected and the

The Probabilities of Certain Vibrational Transitions in Bands of the Fourth Positive System of CO, First Negative System of CO^+, and the Violet System of CN

difference between the equilibrium separations of the upper and lower states of the molecule is small. This can be seen in Table 1, which lists molecular constants of the molecules CO, CO^+ and CN. The results of calculations in the form of squares of the amplitudes of the transition probabilities are given in Tables 2 (CN), 3 (CO^+) and 4 (CO). It was not possible to verify the transition probabilities calculated for the CO molecule, since the vibrational transitions between levels with small quantum numbers lie in the far ultraviolet region. The results of calculations of the transition probabilities of the CN bands were in better agreement with the experimental data than the results of calculations reported by other authors (Ref 5). The CO^+ transition probabilities could not be checked, in the absence of any previously published work.

Card 3/4

SOV/139-59-1-8/34

The Probabilities of Certain Vibrational Transitions in Bands of the Fourth Positive System of CO, First Negative System of CO+, and the Violet System of CN

There are 4 tables and 5 references, of which 1 is Soviet, 2 English and 2 Dutch.

ASSOCIATION: Sibirskiy Fiziko-tekhnicheskiy Institut pri Tomskom Gosuniversitete imeni V.V. Kuybysheva (Siberian Physico-Technical Institute at Tomsk State University imeni V.V. Kuybyshev)

SUBMITTED: July 4, 1958

Card 4/4

S/139/60/000/01/022/041
E201/E491

24.6000

AUTHOR: Popova, T.N.

TITLE: On the Population of Vibrational Levels of Excited CS Molecules in a High-Frequency Electrodeless Discharge

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, Nr 1, pp 124-127 (USSR)

ABSTRACT: The author investigated distribution of excited CS molecules in vibrational levels of the $^1\Pi$ state. Spectrum of this molecule, produced in a high-frequency electrodeless discharge, is due to the $^1\Pi \rightarrow {}^1\Sigma$ transition and it lies between 2400 and 2850 Å. Some of the parameters of the $^1\Sigma$ and $^1\Pi$ states of CS are listed in Table 1; squares of the amplitudes of vibrational probabilities of the $^1\Pi \rightarrow {}^1\Sigma$ transition are given in Table 2. The spectrum was excited in a quartz tube (40 cm length and 2.5 cm diameter) using a high-frequency oscillator whose construction followed the work of S.E.Frish and Ye.Ya.Shreyder (Ref 3). Powdered sulphur and carbon were placed in the tube

Card 1/3

S/139/60/000/01/022/041
E201/E491

On the Population of Vibrational Levels of Excited CS Molecules in a High-Frequency Electrodeless Discharge

which was evacuated to 10^{-4} mm Hg and outgassed. The tube was then placed in an oven and heated to 170°C (at this temperature the saturation vapour pressure of sulphur was 1 mm Hg). Next, the discharge was started and the emission was photographed using a spectrograph ISP-22 and "spectroscopic-type III" photographic plates. The rate of fall of population of the upper vibrational levels with energy E (Fig 1 and Table 3) was found to obey

$$n_i = n_0 \exp(-E_i/kT)$$

where n_i is the population of the i-th level of energy E_i. The temperature T was found from the graph of $\log n_i(E)$; for $\Delta v = -1$ and $\Delta v = 0$ the values of T were 1300 and 1400°K respectively. This difference between the vibrational temperatures lies within the experimental error. There are 1 figure;

69448

S/139/60/000/01/022/041
E201/E491

On the Population of Vibrational Levels of Excited CS Molecules in a High-Frequency Electrodeless Discharge

3 tables and 4 references, 3 of which are Soviet and 1 Dutch.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V.Kuybysheva (Siberian Physico-Technical Institute at Tomsk State University imeni V.V.Kuybyshev)

SUBMITTED: January 10, 1959

Card 3/3

S/139/60/000/005/030/031
E073/E135

24.6100 (1043 only)

AUTHORS: Popova, T.N., and Bokova, N.A.

TITLE: Excitation of Oscillations in the Electron-Oscillation Spectrum of Nitrogen in a High-Frequency Discharge

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No. 5, pp 174-175

TEXT: This is a continuation of a series of papers on investigating the population of the oscillation levels in discharges of the nonuniform type. It was shown in earlier papers that the distribution of the molecules along the oscillation states in a low discharge obeys the exponential law $n_i = n_0 \exp -E_i/kT_{eff}$, where T_{eff} is the temperature characterising its distribution and this temperature differs both from the temperature of the electrons and the gas temperature. A similar result was obtained also for the state of CS molecules in a high-frequency electrode-free discharge. In this paper the population of the oscillation levels $C^3\Pi$ and $B^3\Pi$ molecules of N_2 in a high-frequency discharge was investigated. For the

Card 1/4

S/139/60/000/005/030/031
E073/E135

Excitation of Oscillations in the Electron-Oscillation Spectrum of Nitrogen in a High-frequency Discharge

investigation band sequences with $\Delta v = 1, -2, -3$ of the second positive system and bands of $3 \rightarrow 0$, $4 \rightarrow 1$, $5 \rightarrow 2$, $6 \rightarrow 3$, $7 \rightarrow 4$ of the first nitrogen system were chosen. The electrical circuit was the same as in earlier work (Ref. 1). The discharge was photographed by means of a spectrograph using a panchrome film for the first positive system and spectral plates for the second positive system. Most of the exposures were obtained for a gas pressure of 1 mm Hg col in the discharge tube. However, for elucidating the dependence of the effective temperature on the pressure (for the second positive system) exposures were also made for the pressure range 0.05 to 5 mm Hg col. The relative population of the oscillation levels was determined by means of a method described in an earlier paper (Ref. 2). The results have again confirmed the exponential law of the population of the oscillation levels in the excited state of the molecules. However, the effective temperature characterising this population proved different for the various systems of bands of one and the

S/139/60/000/005/030/031
E073/E135

Excitation of Oscillations in the Electron-Oscillation Spectrum of Nitrogen in a High-frequency Discharge

same molecule for equal experimental conditions. For p = 1 mm Hg col an effective temperature of 11 000 ° abs. was obtained for N_2 on the basis of the bands of the first positive system, whilst a temperature of 3 500 ° abs. was obtained on the basis of the second positive system N_2. In determining the population of the oscillation levels of the $B^3\Pi$ state, the probability of transitions calculated by I. Montgomery (Ref. 3) were applied and for the state $C^3\Pi$ that calculated by A. Omholt (Ref. 4) was applied. For the same experimental conditions the electron temperature was determined optically on the basis of the lines H^α and H^β ; for p = 1 mm Hg col it proved to be 8 000 °abs. According to J. Reingold and K. Garoff (Ref. 5) the gas temperature in the discharge tube for a similar high-frequency discharge is of the order of 500 °abs. Thus, the effective temperature determined by the authors of this paper coincides neither with the temperature of the electrons nor with the gas temperature and it is different for the $B^3\Pi$ and $C^3\Pi$ states

S/139/60/000/005/030/031
E073/E135

Excitation of Oscillations in the Electron-Oscillation Spectrum of Nitrogen in a High-frequency Discharge

of the N_2 molecules. This can be explained by the differing mechanism of populating these levels.

There are 7 references: 3 Soviet and 4 English.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V. Kuybysheva (Siberian Institute of Physics and Technology at Tomsk State University imeni V.V. Kuybyshev)

SUBMITTED: December 3, 1959

POPOVA, T.N.

Phage typing of the bacteria Salmonella typhi and Salmonella typhimurium based on laboratory materials from S.P.Botkin Hospital for the period 1957 - 1959. Trudy LSGMI 66:12-18 '62. (MIRA 17:4)

1. Kafedra mikrobiologii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. kafedroy - prof. M.N.Fisher) i laboratoriya Bol'nitsy imeni Botkina (glavnyy vrach bol'nitsy zasluzhennyy vrach RSFSR M.M.Figurina, konsul'tant - prof.M.N.Fisher).

POPOVA, T.N.; SASHCHENKO, N.M.

Franck-Condon factors for certain vibrational transitions in the fourth positive system of CO. Opt. i spektr. 12 no.6: 791-792 Je '62. (MIRA 15:5)
(Quantum theory) (Carbon monoxide)

S/051/62/012/006/017/020
E039/E420

AUTHORS: Popova, T.N., Sashchenko, N.M.

TITLE: Frank-Condon factors for some vibrational transitions in the 4th positive system of CO

PERIODICAL: Optika i spektroskopiya, v.12, no.6, 1962, 791-792

TEXT: Frank-Condon factors for the above system are calculated by the approximate method of Biberman and Yakubov obtaining values of q(v'v") for a number of transitions (v' and v" are vibration quantum numbers). The results of these calculations are given in Table 2. In the last column are given values of relative intensity calculated by R.G.Estey and included in brackets the experimental values obtained by the authors in a glow discharge at 0.5 mm Hg. Complete agreement between theory and experiment is not possible as the intensity of the molecular bands depends on the 4th power of the transition frequency and on the population of the corresponding upper vibration levels. A value of 9000°K for the vibration temperature is estimated from the experimental values of the relative intensity. This confirms the accuracy of the calculation. Biberman and Yakubov claimed an accuracy of 20%

Card 1/2

PHASE I TRANSMITTAL SHEET BIBLIOGRAPHICAL REPORT AID A21 - I

BOOK Call No.: AF[illegible]

Author: DMITRANOV, V. N. and POPOVA, T. N.

Full Title: GENERAL PHYSICAL GEOGRAPHY. Part I

Transliterated Title: Obshchaya fizicheskaya geografiya. Chast' I

Publishing Data

Originating Agency: None

Publishing House: Publishing House of Geodetic Literature

Date: 1953 No. pp.: 395 No. of copies: 8,000

Editorial Staff

The authors express their gratitude to the reviewers A. S. Korina, P. A. Strodubskaya and V. V. Dobrovol'skiy, editor of the book.

Text Data

Coverage: This textbook differs from usual courses in physical geography by its structure and selection of material. Most attention is given to information important for topographers and cartographers. The drawing of various topographic charts as well as aerial surveying is discussed in many sections of the book. Since separate courses in geology are not included in the curriculum of topographic technical schools in the USSR, this textbook deals with geology and mineralogy also.

1/2

POPOVA, T.N.

Results of laboratory studies on the modification of channels near low-head dam (flat hydraulic model). Trudy Inst.soor.AN Uz.SSR no.7: 5-105 '55. (MLRA 10:3)
(Hydraulic models) (Dams)

124-58-6-6658

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 6, p 50 (USSR)

AUTHOR: Popova, T. N.

TITLE: The Results of Laboratory Investigations of the Reshaping of River Beds by Low-head Dams (Plane Problem) [Rezul'taty laboratornykh issledovaniy pereformirovaniya rusel u nizkonapornykh plotin (ploskaya zadacha)]

PERIODICAL: Tr. In-ta sooruzh. AN UzSSR, 1955, Nr 7, pp 107-136

ABSTRACT: The aim of the author is the study of 1) the prism of deposits formed upstream of the dam; 2) downstream bed erosion by silt-free flow; 3) downstream silting-up by a full and heavily silt-loaded flow from a dam. The experiments were carried out in a trough 34 cm long with sand of grain-diameter up to 9 mm and with locomotive cinders up to 3 mm in diameter. Some qualitative results were obtained, on the strength of which the author considers it possible to determine the character of the deposition of sediments upstream of a dam, and also the erosion and silting-up downstream of a dam by a silt-bearing flow. The qualitative characteristics obtained confirm the known qualitative aspects of the problem. The article does not treat the

Card 1/2

124-58-6-6658

The Results of Laboratory Investigations of the Reshaping of River Beds (Cont.)

problem of the similarity and the extrapolation of the results obtained on a model installation to the full-scale phenomenon; there is also no comparison between the experimental results obtained with sand and those obtained with cinders.

I.V. Yegiazarov

1. Inland waterways--Physical properties
2. Dams--Properties

Card 2/2

POPOVA, T. N.

3(4) PHASE I BOOK EXPLOITATION SOV/2065

Moscow. Institut inzhenerov geodezii, aerofotos"yemki i kartografii

Trudy, vyp. 32 (Transactions of the Moscow Institute of Geodetic Aerial Survey and Cartographic Engineers, Nr 32) Moscow, Geodezizdat, 1958. 130 p. 1,000 copies printed.

Ed. of Publishing House: T. A. Shamarova; Tech. Ed.: V. V. Romanova; Editorial Board: A. I. Mazmishvili (Resp. Ed.), V. I. Avgevich (Deputy Resp. Ed.), G. V. Bagratuni, N. Ya. Bobir, M. M. Voklov, A. I. Durnev, S. V. Yeliseyev, P. S. Zakatov, G. P. Levchuk, N. I. Modrinskiy, M. D. Solov'yev, B. V. Fefilov, and F. F. Shokin.

PURPOSE: This collection of articles is intended for geodesists, photogrammetrists, and cartographers.

COVERAGE: This issue of the Institute's Transactions is composed of articles on geodetic surveying, photogrammetry, cartography, and geodesy. Surveying and geodesy are discussed in articles on building line extensions, earthwork computations, precise trigonometric leveling, latitude determination, solution of trigonometric equations, and the geodetic interference comparator. Articles on photogrammetry include the subheadings photo rectification, spatial triangulation, and photo interpretation. Articles in the fields of geography and cartography include: 1) hunters' maps of Czechoslovakia, 2) maps of the Trans-Oka Region of Moscow oblast' and 3) the distribution of lakes in the East European plains and the Kola-Karelian Massif. References accompany individual articles.

TABLE OF CONTENTS:

Card 3/4

POPOVA, T.N., assistant

Characteristics of lake distribution in the East European Plain and the Kola-Karelian massif. Trudy MIIGAIK no.32:79-87 '58. (MIRA 12:7)

1. Kafedra fizicheskoy geografii Moskovskogo instituta inzhenerov geodezii, aerofotos"yemki i kartografii.
(East European Plain--Lakes)

POPOVA, T. N.

Cand Geog Sci - (diss) "Principles of the distribution of lakes on the territory of the Russian plain." Moscow, 1961. 23 pp; (Moscow State Pedagogical Inst imeni V. I. Lenin); 200 copies; price not given; (KL, 6-61 sup, 201)

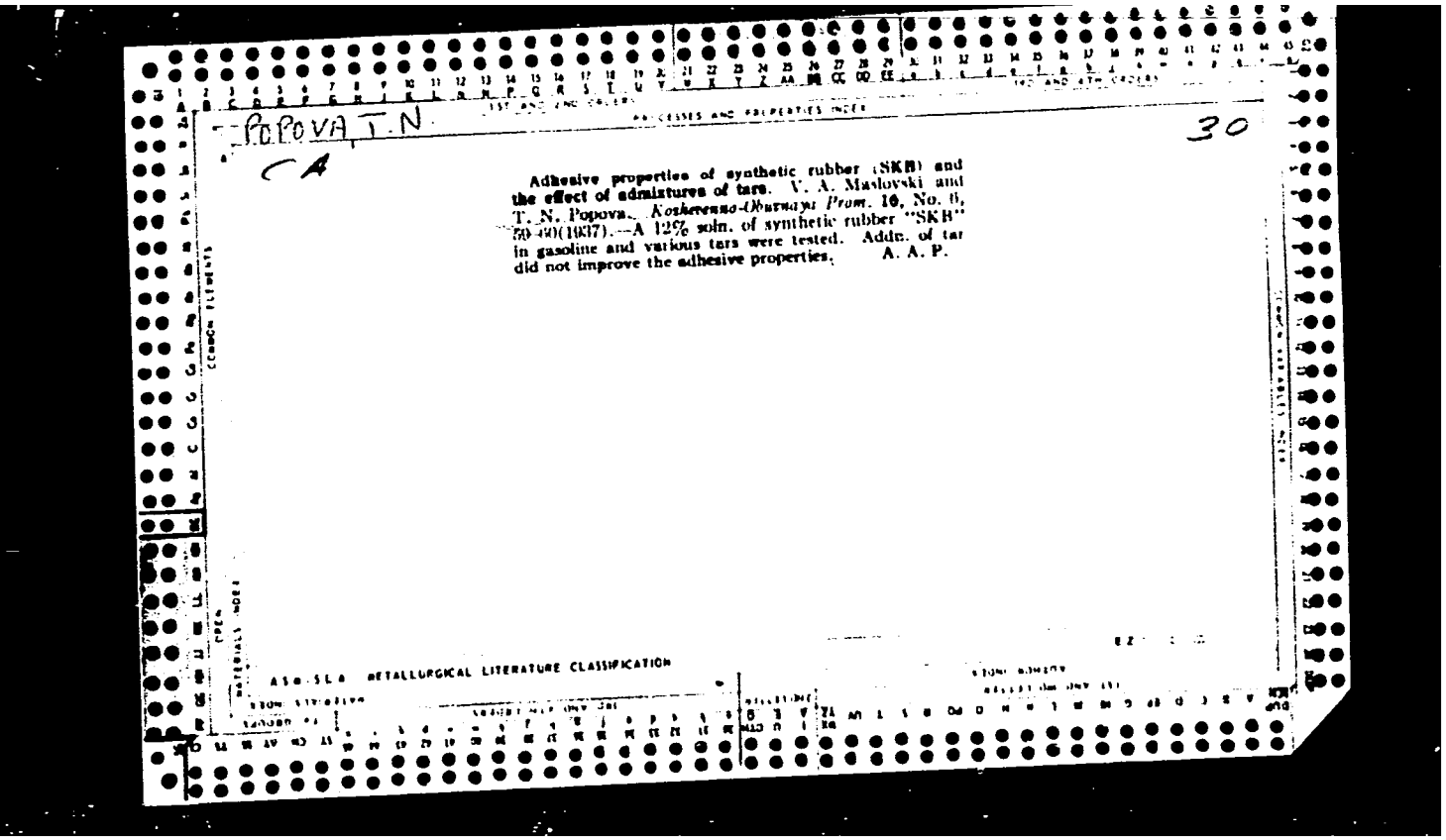
GALUSHKO, A.I.; POPOVA, T.H.

Taxonomy of the section Anodon Bge of the genus Pedicularis L. Uch.zap. Kab.-Balk. gos. un. no.14:44-51'62. (MIRA 16:6)
(LOUSEWORT)

POPOVA, T.N., elektromekhanik

Protect green light filters from deterioration. Avtom.telem. i sviaz' 3 no.1:38 Ja '59. (MIRA 12:1)

1. Kontrol'nyy punkt Orshanskoy distantsii signalizatsii i svyazi Belorusskoy dorogi.
(Railroads--Signaling--Equipment and supplies)



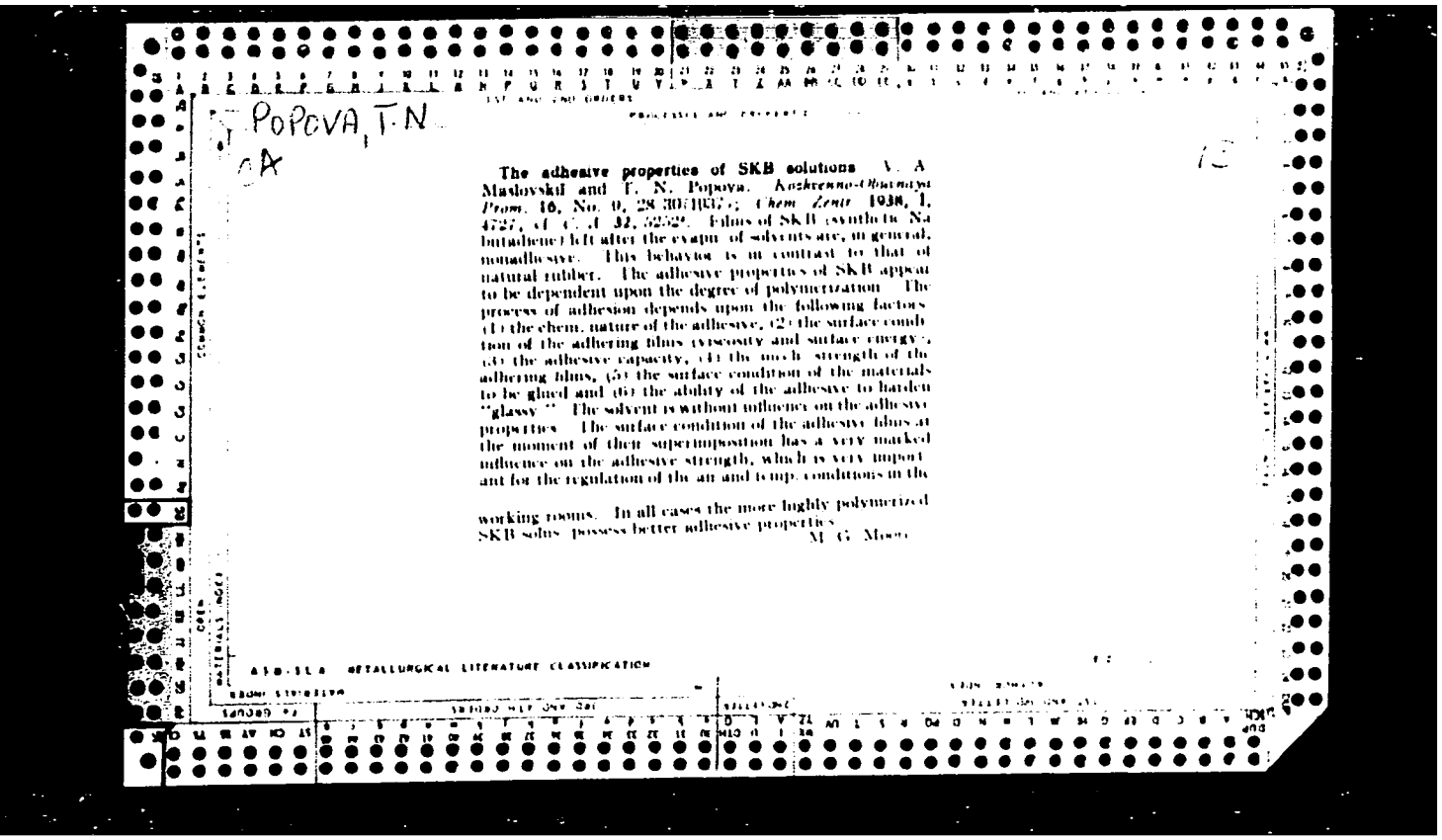
POPOVA T.N.

30

CA

Adhesive properties of synthetic rubber (SKB) and the effect of admixtures of tars. V. A. Maslovski and T. N. Popova. *Koksovanie-Obarnaya Prom.* 16, No. 6, 59-60(1937).—A 12% soln. of synthetic rubber "SKB" in gasoline and various tars were tested. Addn. of tar did not improve the adhesive properties. A. A. P.

A50-SLA METALLURGICAL LITERATURE CLASSIFICATION



POPOVA, T.N.

CA

The adhesive properties of SKB solutions. V. A. Maslovskii and T. N. Popova. *Kauchuk i Rezina Prom.* 16, No. 9, 28-30(1937); *Chem. Zentr.* 1938, I, 4727; cf. *C. A.* 32, 5252⁸. Films of SKB synthetic Na butadiene) left after the evapn. of solvents are, in general, nonadhesive. This behavior is in contrast to that of natural rubber. The adhesive properties of SKB appear to be dependent upon the degree of polymerization. The process of adhesion depends upon the following factors: (1) the chem. nature of the adhesive, (2) the surface condition of the adhering films (viscosity and surface energy), (3) the adhesive capacity, (4) the mech. strength of the adhering films, (5) the surface condition of the materials to be glued and (6) the ability of the adhesive to harden "glassy." The solvent is without influence on the adhesive properties. The surface condition of the adhesive films at the moment of their superimposition has a very marked influence on the adhesive strength, which is very important for the regulation of the air and temp. conditions in the working rooms. In all cases the more highly polymerized SKB solns. possess better adhesive properties.

M. G. Moore

A.S.T.M. METALLURGICAL LITERATURE CLASSIFICATION

SKOPINTSEV, B. A.; POPOVA, T. P.

Accumulation of manganese in the waters of hydrogen sulfide basins as revealed by a study in the Black Sea. Trudy GIN no. 97:165-181 '64. (MIRA 17:5)

POPOVA, T.P., elektromekhanik

Device for checking signal light bulbs. Avtom., telem.i sviaz 3 no.9:29 S '59. (MIRA 13:2)

1. Kontrol'no-ispytatel'nyy punkt Orshanskoy distantsii signalizatsii i svyazi Belorusskoy dorogi.
(Railroads--Electric equipment)

POPOVA, T.N.

Excretion of bacteriophages in dysentery as a method for laboratory diagnosis of dysentery. Trudy LSGMI 30:31-34 '56. (MLRA 10:8)

1. Kafedra mikrobiologii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. kafedroy i laboratoriyey - prof. M.N.Fisher)

(DYSENTERY, BACILLARY, diagnosis,
fecal bacteriophage determ. (Rus))
(FECES, microbiology,
bacteriophage in bacillary dysentery, diag. value (Rus))
(BACTERIOPHAGE,
in faces in bacillary dysentery, diag. value (Rus))

KOZLOVA, A.A.; POPOVA, T.N.

Diagnostic value of phage excretion in dysentery. Trudy LSGMI 46: 132-138 '59. (MIRA 13:11)

1. Kafedra mikrobiologii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav.-kafedroy - prof. M.N.Fisher).
(DYSENTERY) (BACTERIOPHAGE)

POPOVA, T.N.

Comparative data on phage typing of typhoid cultures by means of Vi-phages during 1951-1952 and 1955-1956 according to data of the S.P.Botkin Hospital. Trudy LSGMI 46:162-168 '59. (MIRA 13:11)

1. Kafedra mikrobiologii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta i laboratoriya Bol'nitsy imeni S.P.Botkina (zav. kafedroy i laboratoriyey - prof. M.N.Fisher).
(SALMONELLA TYPHOSA) (BACTERIOPHAGE)

AID P - 3179

Subject : USSR/Meteorology

Card 1/1 Pub. 71-a - 6/23

Author : Popova, T. P.

Title : On the problem of phases in precipitation

Periodical : Met. i. gidr., 5, 26-30, S/O 1955

Abstract : The author expounds Muchnik's theory on the interdependence of the height of the zero isotherm, the air temperature at the surface and the type of precipitation, setting the zero isotherm at 500 m. The article discusses the interdependence of surface air temperature, temperature at 850 mb isobaric surface, and the relative geopotential $\frac{H850}{1000}$. A mathematical analysis with diagrams, equations and tables. Two Russian references, 1952 and 1953, and 1 English, 1952.

Institution : None

Submitted : No date

Translation M-1170, 23 Jul 57

POPOVA, T. P.

POPOVA, T. P.: "Heat fronts during the winter over the European portion of the USSR and the evolution of precipitation caused by them." Main Administration of the Hydrometeorological Service, Council of Ministers USSR. Central Inst of Weather Forecasting. Moscow, 1956. (Dissertation for the Degree of Candidate in Geographical Sciences).

SO: Knizhnaya Letopis', No 23, 1956

POPOVA, T.P.

Features of heat layers over the European territory of the U.S.S.R. in winter. Meteor.i gidrol. no.6:12-20 Je '57. (MLRA 10:8)
(Atmosphere)

POPOVA, T.P.

Analyzing evolution conditions of warm fronts over the European territory of the U.S.S.R. during the cold period of the year. (MIRA 11:3)
Trudy TSIP no.60:80-95 '57.
(Atmosphere)

BURTSEV, A.I.; POPOVA, T.P.

Comparative evalution of the accuracy of different methods used in computing vertical air velocities. Trudy TSIP no.77: 71-81 '58. (MIRA 12:5)
(Meteorology)

POPOVA, T. P.

3(7) PHASE I BOOK EXPLOITATION SOV/3029

Moscow. Tsentral'nyy institut prognozov

Voprosy sinopticheskoy meteorologii (Problems in Synoptic Meteorology) Moscow, Gidrometeoizdat (otd.) 1959. 62 p. (Series: Its: Trudy, vyp. 79) 1,100 copies printed.

Sponsoring Agency: USSR. Glavnoye upravleniye gidrometeorologicheskoy sluzhby.

Ed. (title page): B. D. Uspenskiy; Ed. (inside book): L. B. Blinnikov; Tech. Ed.: T. Ye. Zemtsova.

PURPOSE: This issue of the Institute's Transactions is intended for specialists in meteorology.

COVERAGE: This collection of articles discusses problems in synoptic meteorology. The first two articles deal with the formation and structure of frontal clouds in the Western Siberia and Ural Mountain area. Other articles discuss upper-level cyclonic and anticyclonic phenomena, the evolution of thermal fields, and thermal convection. References accompany each article.

Card 1/2

05340

3.5008

S/050/61/000/001/003/007
B012/B058

AUTHOR: Ponova, T. P.

TITLE: On the Role of the Vertical Air Movements in the Change of Temperature Gradients and in Cloud Formation

PERIODICAL: Meteorologiya i gidrologiya, 1961, No. 1, pp. 26-31

TEXT: It is shown here first that the change in time of the vertical temperature gradient ($\partial\gamma/\partial t$) is determined by the change of the vertical velocity with the height ($\partial w/\partial z$) and by the change of the vertical temperature gradient with the height ($\partial\gamma/\partial z$). This is illustrated here by Table 1. This relation is used next for the analysis of the evolution of the thermic field in the frontal zone. Three special cases are studied: 1) Rising air movement increases in the range of the frontal zone with the height ($w > 0$, $\partial w/\partial z > 0$); 2) rising air movement decreases in the range of the frontal zone with the height ($w > 0$, $\partial w/\partial z < 0$); 3) falling air movement increases in the range of the frontal zone with the height ($w < 0$, $\partial w/\partial z < 0$). w is the vertical velocity and γ the actual temperature

Card 1/5

On the Role of the Vertical Air Movements in the Change of Temperature Gradients and in Cloud Formation

S/050/61/000/001/003/007
B012/B058

gradient. It is pointed out that the irregular height distribution of the vertical speed also affects in a certain way the change of γ in the range of the tropopause. The transformation of the stratification curve in the range of the troposphere under the influence of the irregular height distribution of the vertical velocity was explained by O. G. Krichak (Ref. 5). Yu. N. Volkonskiy (Ref. 2) studied the causes for the change of the troposphere position and proved that the conclusions by Krichak comply with the theory of the substantial displacement of the tropopause. On the basis of the considerations mentioned it is stated that the irregular height distribution of the vertical velocity also greatly affects the position of the tropopause and in many cases leads to a great change of the vertical temperature gradient in the range of the tropopause. Two special cases are studied here: 1) In the tropopause range, the vertical air velocity is constant with the height ($\partial w/\partial z = 0$) and 2) $\partial w/\partial z \neq 0$. V. A. Luzin and V. S. Kozharin established that the penetration of clouds into the stratosphere occurs owing to a reduction of the troposphere height, the height of the upper cloud boundary being maintained. The

On the Role of the Vertical Air Movements in the Change of Temperature Gradients and in Cloud Formation

S/050/61/000/001/003/007
B012/B058

analysis of 149 ascents of aircrafts and radio probes in winter showed that there is a correlation between the temperature course in the tropopause range and the distance from the tropopause to the upper boundary of cirrus clouds. The vertical velocities in the range of the fronts over the European part of the USSR during winter are compared in Table 2. Calculation results by the author and A. I. Burtsev (calculations according to the Buleyev-Marchuk method) were used in the process. There are 2 figures, 3 tables, and 7 Soviet references.

Card 3/5

88348

S/050/61/000/001/003/007
B012/B058

1) Table 1

Направление вертикальных движений и их изменение с высотой	2) Нижняя граница инверсии, изотермии $\left(\frac{\partial T}{\partial z} < 0\right)$		3) Верхняя граница инверсии, изотермии $\left(\frac{\partial T}{\partial z} > 0\right)$	
	$\frac{\partial w}{\partial z}$	$-w\frac{\partial T}{\partial z}$	$\frac{\partial w}{\partial z}$	$-w\frac{\partial T}{\partial z}$
4) Восходящие движения:				
а) возрастают с высотой	+	+	+	−
б) убывают с высотой	−	+	−	−
5) Нисходящие движения:				
в) возрастают с высотой	−	−	−	+
г) убывают с высотой	+	−	+	+

Card 4/5

Legend to Table 1: digit sign for the change in time of the vertical temperature gradient in dependence on the character of its height distribution and on changes in the vertical velocity. 1) Direction of the vertical movements and their changeability with height. 2) Lower boundary of inversion. 3) Upper boundary of inversion. 4) Rising movements. 5) Falling movements. a) increase with height, b) decrease with height. 7) Falling movements.

Legend to Table 2: frequency of the various values of vertical velocity. 1) level (mb), 2) number of cases, 3) gradation of the vertical velocity (cm/sec), 4) mean according to modulus.

Card 5/5

CHISTYAKOV, A.D.; BURKOVA, M.V.; ORLOVA, Ye.M.; GLAZOVA, O.P.; PED', D.A.; BERLYAND, M.Ye.; ABRAMOVICH, K.G.; POPOVA, T.P.; MATVEYEV, L.T.; BACHURINA, A.A.; LEBEDEVA, N.V.; PESKOV, B.Ye.; ROMANOV, N.N.; VOLEVAKHA, N.M.; PCHELKO, I.G.; PETRENKO, N.V.; KOSHELENKO, I.V.; PINUS, N.Z.; SHMETER, S.M.; BATYAYEVA, T.F.; MININA, L.S.; BEL'SKAYA, N.N., nauchn. red.; ZVEREVA, N.I., nauchn. red.; KURGANSKAYA, V.M., nauchn. red.; MERTSALOVA, A.N., nauchn. red.; TOMASHEVICH, L.V., nauchn. red.; SAGATOVSKIY, N.V., otv. red.; KOTIKOVSKAYA, A.B., red.

[Manual of short-range weather forecasting] Rukovodstvo po kratkosrochnym prognozam pogody. Leningrad, Gidrometeoizdat. Pt.2. Izd.2. 1965. 491 p. (MIRA 18:8)

1. Moscow. TSentral'nyy institut prognozov.

L 61409-65 FSS-2/EWT(l)/FS(v)-3/EWG(v)/FCC TT/GW
ACCESSION NR: AT5017520 UR/3118/65/000/008/0015/0028

41
39
B+1

AUTHOR: Popova, T. P.
55

TITLE: The relationship between cloudiness and vertical movements

SOURCE: Mirovoy meteorologicheskiy tsentr. Trudy, no. 8, 1965. Voprosy sputnikovoy meteorologii (Problems in satellite meteorology), 15-28

TOPIC TAGS: weather forecasting, cloud, air mass, radiosonde, artificial satellite/ Tiros III artificial satellite
12 12,65

ABSTRACT: The question of how cloudiness may be related to the spatial distribution of vertical velocities has been investigated. Data have been obtained from standard meteorological stations in Western Europe and European SSSR, from special airplane investigation at 15 localities in European SSSR, from air force planes on routine flights, from radiosonde measurements at aerological stations in Western Europe and European SSSR, and from computations (by the Burtsev method) on basic isobaric surfaces. The technique employed involves a comparison of cloud fields with fields of vertical velocity at different levels. Cloud maps from land data, maps of upper-level boundaries from radiosonde data, space and time vertical

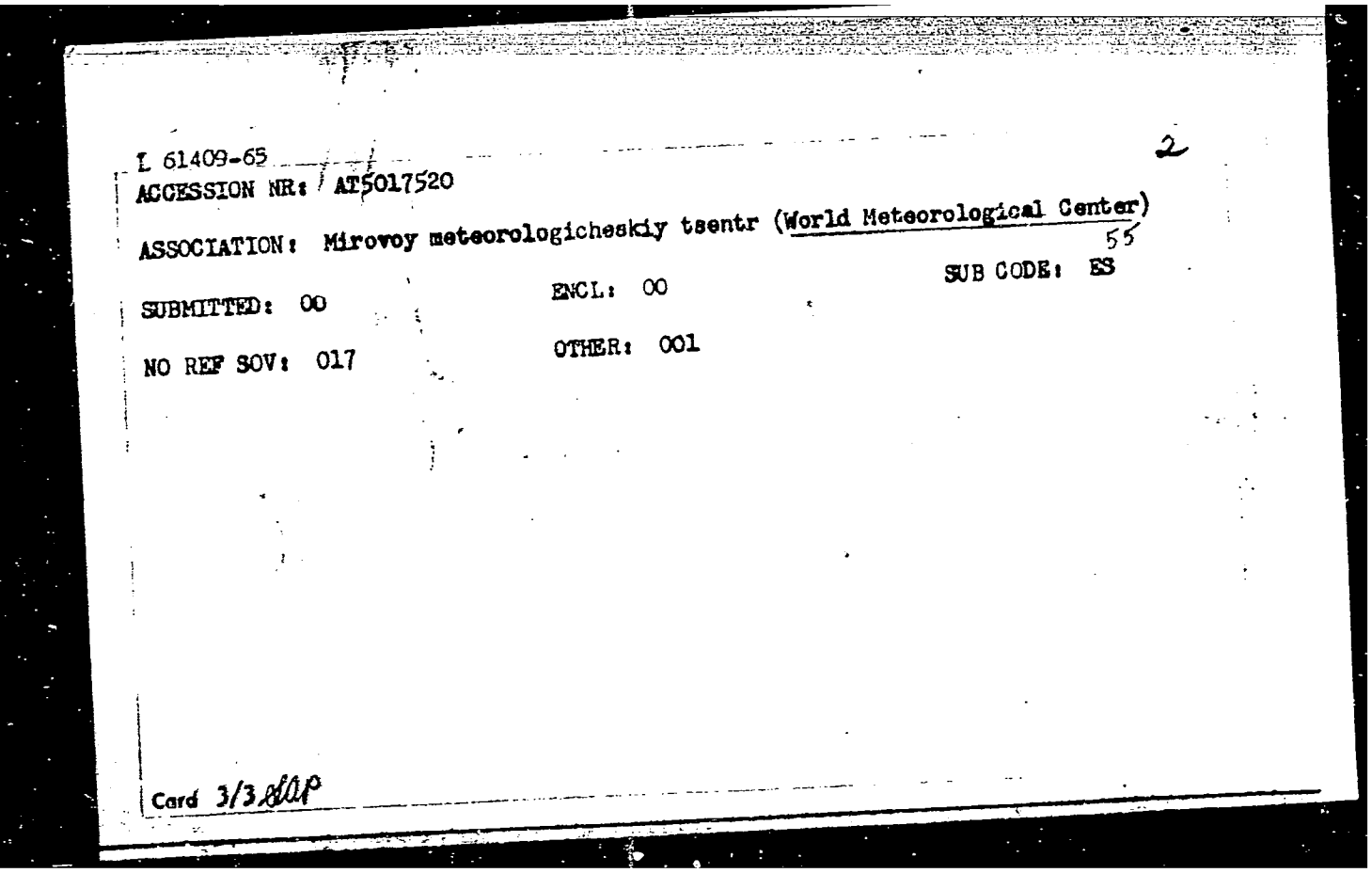
Card 1/3

L 61409-65

ACCESSION NR: AT5017520 O

profiles of the troposphere and upper stratosphere from radiosonde data, and maps of computed velocities at different levels were used. Best correlation was found in the lower half of the troposphere. The fields of cloudiness and vertical velocity are displaced at higher levels because of inclination of the axis of movement. For vertical velocities at the 850, 700, and 500 mb isobaric surfaces, the average correlation is 0.40, which means that the phenomena are comparable in sign 70% of the time. At 200 and 300 mb the correlation coefficient is only 0.33. When cloudiness is slight, the greatest downward velocity is found in the convective movements of thick cumulus and cumulonimbus clouds. For thick cloudiness the difference in average vertical velocity is much more marked for the various cloud types than when cloudiness is slight. The average vertical velocity for stratocumulus and stratus clouds is generally rather low. A comparison was made of three maps obtained from data of Tiros III: one of cloudiness, one of vertical velocities at 700 mb, and one of computed velocities from the cloudiness data. Results were not as good as data obtained from terrestrial stations. It proved impossible to distinguish zones of stratus clouds from zones of cumulus clouds. It is concluded that the differences in cloud classification for observations from satellites and from the ground introduce definite difficulties in using satellite data for determining vertical velocities. Orig. art. has: 5 figures and 11 tables.

Card 2/3



L 61409-65

ACCESSION NR: AT5017520

2

ASSOCIATION: Mirovoy meteorologicheskiy tsentr (World Meteorological Center)

55

SUBMITTED: 00 ENCL: 00 SUB CODE: ES

NO REF SOV: 017 OTHER: 001

Card 3/3 dap

POPOVA, T.P.

2817. **Polarographic determination of lead and zinc in natural waters.** T. P. Popova. *Sb. Nauch.-Tekhn. Inform Min. Geol. i Okhrany Nedr.*, 1955, (1), 129–130; *Ref. Zaur. Khim.*, 1956, Abstr. No. 68,888.—To prevent possible losses of Pb and Zn in storing the sample, and to reduce the vol. of the sample, these elements are co-pptd. in the field with $CaCO_3$. The $CaCO_3$ ppt. carries down Pb completely, and Zn is completely removed at concn. < 1·5 mg per litre. The $Ca(NO_3)_2$ obtained on solution of the ppt. serves as the polarographic background in the determination of Pb. Zinc is determined polarographically after removal of Pb by co-pptn. with $CaCO_3$ in the presence of ammonium salts. Losses of Zn are caused by the presence of Fe in concn. > 20 or 25 mg per litre. The sensitivity of the method corresponds to 0·01 to 0·02 mg per litre

C. R. KOPKIN

POPOVA T. P.

A critique of the All-Union State Standard (GOST. of the copper, lead, and zinc determination in waters. T. P. Popova (All-Union Sci.-Research Inst. Hydrogeol. and Eng. Geol., Moscow). *Gidrokhim. Materialy* 24, 81-2(1956).
N. Charmandarian

AUTHOR: Sochevanov, V. G. (Supervisor), Volkova, G. A., Volkova, S. P., Martynova, L. T., Pakhomova, K. S., Popova, T. P., Rozbianskaya, A. A., Rozovskaya, G. V., and Shmakova, N. V.

Call Nr AF 1095038

TITLE: Methods of Chemical Analysis of Mineral Ores (Metody khimicheskogo analiza mineral'nogo syr'ya); Polarography (Polyarografiya). Nr 2.

PUB. DATA: Gosudarstvennoye nauchno-tekhnicheskoye izdatel'stvo literatury po geologii i okhrane nedr, Moscow, 1956, 100 pp., 5,000 copies.

ORIG. AGENCY: Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya (VIMS) Ministerstva geologii i okhrany nedr SSSR

EDITOR: Sochevanov, V. G.

PURPOSE: This is a manual for use in industrial laboratories of agencies under the Ministry of Geology and Conservation of Mineral Resources of the USSR.

Card ~~1/11~~

Methods of Chemical Analysis of Mineral Ores (Cont.) Call Nr AF 1095038

COVERAGE: The author claims that the Ministry of Geology and Conservation of Mineral Resources of the USSR first used polarographic analysis of solid mineral resources in the laboratory of the Ural Geological Administration and later in the laboratories of the Kazakh Geological Administration. Polarographic laboratory equipment is manufactured by the plant "Geologorazvedka" (recording polarographs СГ-8, СГМ-8, polarometers ПВ-1), by the Ural Branch of the Academy of Sciences, USSR (polarometer "Ufan"), by the Academy of Sciences of the Kazakh SSR (polarometer ПМТ-2), and by the Gintsvetmet (polarometer ПВ-5). The following scientists took part in the preparation of the instructions under the direction of V. G. Sochevanov: the staff of the Laboratory of Physicochemical Methods of Analysis (VIMS), T. P. Popova (VSEGINGEO) and A. A. Rozbianskaya (Laboratory of Mineralogy and Geochemistry of Rare Earth Metals of the Academy of Sciences, USSR). The methods were recommended for use in industrial laboratories under the Ministry of Geology and Conservation of Mineral Resources of the USSR by the Methodological Section of the

Card 2/11

Methods of Chemical Analysis of Mineral Ores (Cont.) Call Nr AF 1095038

Scientific Council of the VIMS, namely: G. A. Lanskiy (Chairman), V. I. Titov (Vice-Chairman), V. M. Pensionerova (Secretary), S. K. Rusanov, V. M. Zvenigorodskaya, V. G. Sochevanov, I. V. Sorokin, L. I. Gerkhardt, I. Yu. Sokolov, and I. V. Shmanenkov (Deputy Director of VIMS, Science Division). It was found that the polarographic method for determination of a few per cent or of traces of the constituents frequently excels orthodox methods. The book gives instructions for the polarographic determination of copper, zinc, cadmium, lead, tin, molybdenum, antimony, indium, and thallium in ores. The polarographic method of analysis is discussed in detail, the equipment is described, and lists of reagents are given. Illustrations of electrolytic cells are given on pp. 6,7,8, and 9. The institutions where the polarographic methods were developed are mentioned in the Table of Contents and in the description of the individual procedures in the text. (Soviet scientists distinguish two types of apparatus: 1. polarometers or "visual polarographs", and 2. recording polarographs or "polarographs".) An extensive bibliography is included. There are 47 references of which 40 are USSR.

Card 3/11

85866

24,7800 (1144,1559)
9.2180 (3203,1162)

S/048/60/024/011/002/036
B006/B056

AUTHORS: Yatsenko, A. F. and Popova, T. P.

TITLE: Some Electrical Properties of Bariumtitanate Activated With Rare Earths

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 11, pp. 1311 - 1313

TEXT: The present paper is the reproduction of a lecture delivered at the 3rd Conference on Ferroelectricity, which took place in Moscow from January 25 to 30, 1960. The authors investigated the electrical properties of $BaTiO_3$ samples containing additions of 0.1-3 mole% of rare earth oxides (denoted by TR): Sm_2O_3, Pr_2O_3, Nd_2O_3, Y_2O_3, Tb_2O_3, Dy_2O_3, Er_2O_3, Lu_2O_3, Tu_2O_3, Yb_2O_3, and Gd_2O_3. The electrical characteristics measured in the case of some of the samples investigated are given in the Table. The method of producing the samples is briefly described. Small TR-additions in general increased the stability of the tetragonal phase. The

Card 1/5

temperature dependence of the dielectric constants was measured in the case of all samples, and also the tangent of the loss angle at V=50 v and ν = 1000 cps. The ε value at room temperature, ε_o, as well as at Curie point ε_θ are also given in the Table. Fig.1 shows $\varepsilon(t)$ and $tg\ \delta = f(t)$ for $BaTiO_3$ with different Pr-additions. Most of the compounds investigated had a high dielectric constant, and some of them also had considerable loss angles. In general, a decrease of $\varepsilon_\theta/\varepsilon_o$ as well as a decrease and broadening of the ε-maximum was found in the $\varepsilon(t)$-curve with increasing TR-content. Also the temperature course of resistivity was found to be dependent on the TR-additions, viz. in an interesting manner: TR concentrations of 1-3% exerted no influence, the curves showed the same course as with pure $BaTiO_3$ (exponential decrease of resistivity with increasing temperature); samples containing 0.1% Sm_2O_3, 0.1% Er_2O_3, 0.1% Tb_2O_3, and 0.1% Nd_2O_3, when heated at Curie point, had a resistivity peak (increase by several orders of magnitude), whereas when cooled at the same place they had a flat maximum (Fig.2).

65866

Some Electrical Properties of Barium-titanate Activated With Rare Earths

S/048/60/024/011/002/036
B006/B056

Smaller peaks were observed also in samples which contained 0.3% Tb, 0.3% Nd, 0.3% Er, and 0.3% Tu. It was further found that in the resistivity peak (at Curie point) the current not only dropped to zero, but also reversed its direction, which is considered to be a consequence of a marked change in polarization. This effect was particularly marked in $BaTiO_3$ samples with 0.1 mole% Sm_2O_3, Nd_2O_3, Er_2O_3, and Tb_2O_3. Greater or smaller additions produced no effect; the possible practical importance is finally pointed out. There are 2 figures, 1 table, and 4 references: 2 Soviet, 1 US, and 1 Japanese.

ASSOCIATION: Fiziko-matematicheskiy fakul'tet Rostovskogo-na-Donu gos. universiteta (Department of Physics and Mathematics of Rostov-na-Donu State University)

Card 3/5

85866

S/048/60/024/011/002/036
B006/B056

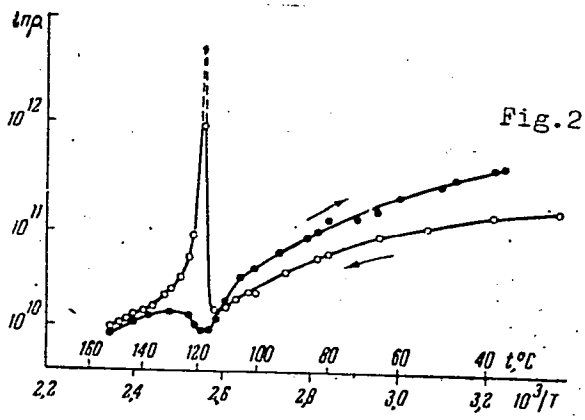


Fig.2

Fig.2

Card 4/5

85865

S/048/60/024/011/002/036
B006/B056

Activator ~~Добавка~~ TR	Activator ~~Содержание добавки~~, % Concentration	ε_s	ε_0	$\frac{\varepsilon_0}{\varepsilon_s}$	tg δ	θ,°C	E,eV
Sm	0,1	2575	5770	2,24	0,175	130	0,24
	0,3	1900	6120	3,22	0,078	130	0,74
	1	2850	5700	2	0,09	98	0,7
	3	5020	6350	1,27	0,78	41	0,78
Pr	0,1	1500	7850	5,24	0,09	122	0,84
	0,3	2300	6750	2,9	0,099	119	0,8
	1	3100	4500	1,45	0,098	100	0,7
	3	3650	3950	1,08	0,072	45	0,6
Yb	0,1	1670	3900	2,33	—	124	0,3
	0,3	1900	3800	2	—	124	0,77
	1	1500	3450	2,3	—	96	0,6

Table

Card 5/5

POPOVA, T.P.

Relation of cloudiness to vertical motions. Trudy MMTS no.8: 15-28 '65. (MIRA 18:9)

POPOVA, T. P.

Reduction-oxidation state of uranium in underground waters.
Trudy VSEGINGEO no.9:224-236 '64. (MIRA 17:10)

POPOVA, T.P.; ROSLYAKOV, V.S.

Measuring the redox potential of underground waters. Biul.nauch.-tekh.inform VIMS no.1:92-93 '63. (MIRA 18:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii i inzhenernoy geologii.

LOMONOSOV, Ye.G., kand. fiz.-matem. nauk (Moskva); POPOVA, T.P., kand. geograf. nauk (Moskva)

Regulated vertical movements of air and cloudiness. Meteor. i gidrol. no.3:10-16 Mr '64. (MIRA 17:3)

ACCESSION NR: AP4022210

S/0050/64/000/003/0010/0016

AUTHORS: Lomonosov, Ye. G. (Candidate of physical-mathematical sciences); Popova, T. P. (Candidate of geographical sciences)

TITLE: Ordered vertical movements of the air and of cloudiness

SOURCE: Meteorologiya i gidrologiya, no. 3, 1964, 10-16

TOPIC TAGS: air, cloud, vertical movement, ordered vertical movement, cloudiness, geostrophic approximation, advection, isobaric surface

ABSTRACT: The authors have computed vertical movement of the air on the basis of an equation for heat influx in adiabatic and geostrophic approximation. The vertical velocity is determined by geostrophic advection of temperature and by local variation in this value. The velocity may be represented as a function of the height of isobaric surfaces and as a function of the instantaneous changes in this pressure field with time. The authors have computed velocities from a number of data and have compared these values with actual states of cloudiness. They conclude that information on vertical velocities furnishes little of diagnostic value in predicting cloudiness. But, in the examples studied, where well-

Card 1/2

ACCESSION NR: AP4022210

defined descending movements of air were observed, cloudiness was generally absent. Information on clouds (form, extent), however, may reliably determine the nature of vertical movements when conditions are favorable. Orig. art. has: 3 figures and 1 formula.

ASSOCIATION: none

SUBMITTED: 00	DATE ACQ: 08Apr64	ENCL: 00
SUB CODE: AS	NO REF SOV: 005	OTHER: 000

Card 2/2

SOKOLOV, I.Yu.; AYDIN'YAN, N.Kh.; BELEKHOVA, V.N.; BRODSKIY, A.A., starshiy nauchnyy sotrudnik; GLEBOVICH, T.A.; DALMATOVA, T.V.; KOMAROVA, A.I.; KOMAROVA, Z.V.; KOPYLOVA, M.M.; KUDRYAVTSEVA, M.M.; LIBINA, R.I.; LOGINOVA, L.G.; MARGOLIN, L.S.; MARKOVA, A.I.; MEDVEDEV, Yu.L.; MILLER, A.D.; MULIKOVSKAYA, Ye.P.; NECHAYEVA, A.A.; OZEROVA, N.V.; PALKINA, I.M.; PETROPAVLOVSKAYA, L.A.; POPOVA, T.P.; REZNIKOV, A.A.; SERGEYEV, Ye.A.; SETKINA, O.N.; STEPANOV, P.A.; SUVOROVA, Ye.G. [deceased]; SHERGINA, Yu.P.; PANOVA, A.I., red.izd-va; IVANOVA, A.G., tekhn.red.

[Methodological handbook on the determination of microcomponents in natural waters during prospecting for ore deposits] Metodicheskoe rukovodstvo po opredeleniiu mikrokomponentov v prirodnykh vodakh pri poiskakh rudnykh mestorozhdenii. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po geol. i okhrane nedr, 1961. 287 p.
(MIRA 14:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii i inzhenernoy geologii (for Sokolov, Brodskiy, Glebovich, Ozerova, Kudryavtseva, Loginova, Markova, Medvedev, Belekhova, Palkina,
(Continued on next card)

SOKOLOV, I.Yu.---(continued) Card 2.
Popova, Petropavlovskaya). 2. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR (for Aydin'yan). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut metodiki i tekhniki razvedki (for Miller, Sergeyev, Margolin). 4. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut (for Mulikovskaya, Reznikov). 5. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya (for Komarova, A.).
(Prospecting--Geophysical methods)
(Water, Underground--Analysis)

POPOVA, T.P.

Coprecipitation of some minor elements of natural waters and calcium carbonate. Geokhimiia no.12:1125-1128 '61. (MIRA 15:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii i inzhenernoy geologii, Moskva.
(Trace elements) (Calcium carbonate)

SKOPINTSEV, B.A.; POPOVA, T.P.

Some results of iron, manganese, and copper determination in the water of the Black Sea. Trudy MGI 19:21-30 '60. (MIRA 14:7)
(Black Sea—Sea water—Composition) (Trace elements)

YATSENKO, A.F.; POPOVA, T.P.

Some electrical properties of barium titanate activated by rare earth elements. Izv. AN SSSR Ser. fiz. 24 no.11:1311-1313 N '60.
(MIRA 13:12)

1. Fiziko-matematicheskiy fakul'tet Rostovskogo-na-Donu gosudarstvennogo universiteta.
(Barium titanate--Electric properties)

DRABKINA, I.Ye.; ZYRYANOV, B.F.; ORECHKIN, D.B.; Prinimala uchastiye: POPOVA, T.S., inzh.

Color stability of the illuminating kerosene produced by the hydrogenation of crude oil. Khim. i tekh. topl. i masel. 6 no.10:12-16 O '61. (MIRA 14:11)

(Kerosene)

POPOVA, T.S.

DOLGOPOLOV, N.N.; SHATSKIY, N.S., akademik, otvetstvennyy redaktor; BELYANKIN, D.S., akademik, redaktor [deceased]; NALIVKIN, D.S., akademik, redaktor; AFANAS'YEV, G.D., redaktor; VARENTSOV, M.I., redaktor; OBRUCHEV, S.V., redaktor; TIKHOMIROV, V.V., redaktor; POPOVA, T.S., redaktor; GRAKOVA, Ye.D., tekhnicheskiy redaktor.

[Problems pertaining to the geology of Asia] Voprosy geologii Azii. Moskva, Izd-vo Akademii nauk SSSR, 1954. 807 p. [Microfilm] (MLRA 8:2)

1. Akademiya nauk SSSR. 2. Chlen-korrespondent Akademii nauk SSSR (for Afanas'yev, Varentsov, Obruchev)
(Siberia--Geology)